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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,281	02/01/2002	Max Friedheim	1776-11	2057

7590 05/27/2011

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ART UNIT	PAPER NUMBER
3742	

MAIL DATE	DELIVERY MODE
05/27/2011	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAX FRIEDHEIM

Appeal 2010-003009
Application 10/066,281
Technology Center 3700

Before SCOTT R. BOALICK, JEFFREY B. ROBERTSON, and ERIC B. CHEN, *Administrative Patent Judges.*

CHEN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1-27, all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

Appellant's invention relates to a generator and control system for generating superheated vapor including a vaporization chamber and at least one input port connectable to an adjustable control for controlling input of liquid into the vaporization chamber. (Spec. Abstract.)

Claims 1-25 stand rejected under U.S.C. § 112, first paragraph as failing to comply with the written description requirement.

Claims 1-25[1] stand rejected under U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-8 and 11-27 stand rejected under 35 U.S.C. 103(a) as being obvious over Friedheim (U.S. Patent No. 5,471,556 or 4,414,037) and Hutchinson (U.S. Patent No. 6,393,212).

Claims 9 and 10 stand rejected under 35 U.S.C. 103(a) as being obvious over Friedheim, Hutchinson and Berthoud (U.S. Patent No. 3,863,841).

We are convinced by Appellant's arguments (Reply Br. 8) that the newly added claim language "liquid supply means" as recited in claims 1 and 21 is supported by the originally-filed Specification.

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[1] The Examiner found that the claim language "liquid supply means" recited in independent claims 1 and 21 does not comply with 35 U.S.C. § 112, second paragraph. (Ans. 4.) However, claims 26 and 27 do not recite this claim language. Thus, the Examiner erroneously included independent claims 26 and 27 in the rejection of claims 1-25 under 35 U.S.C. § 112, second paragraph. (Ans. 4.)

The Examiner found that "a recitation 'liquid supply means' . . . is not introduced in the applicant's disclosure as originally filed" and thus "[t]he applicant did not have in possession the structure and its equivalent thereof under the claimed scope of the 'liquid supply means.'" (Ans. 3.) We do not agree.

We interpret "liquid supply means" as a means-plus-function claim limitation. The recited function of the "liquid supply means" is for supplying liquid to the vaporization chamber through an input. Accordingly, such language must be construed in accordance with 35 U.S.C. § 112, sixth paragraph by "look[ing] to the specification and interpret[ing] that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure." *In re Donaldson Co., Inc.,* 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc).

The Specification describes "[a] liquid pick-up tube inlet 38 . . . defined in [a] control panel 16 to receive a liquid pick-up tube 40" (Spec. 4, ¶ 5; fig. 3) as well as a pump 72 (Spec. 5, ¶ 4; fig. 2). In the "Description of the Prior Art" section, the Specification also describes that liquid for steam generation is drawn from a reservoir. (Spec. 1, ¶ 3.) In other words, the corresponding structure to the claimed "liquid supply means" is the liquid pick-up tube inlet 38, the liquid pick-up tube 40, the pump 72 and the unreferenced reservoir described in the Specification. Thus, the disclosure of such corresponding structure in the Specification reasonably conveys to the artisan that, as of the filing date of the application, the inventor had possession of the later claimed subject matter. *See Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991).

Therefore, we do not agree with the Examiner that the newly added claim language "liquid supply means," as recited in claims 1 and 21, is unsupported by the originally-filed Specification.

Accordingly, we reverse the rejection of claims 1 and 21 under 35 U.S.C. § 112, first paragraph. Claims 2-20 and 22-25 depend from independent claims 1 and 21 and we reverse the rejection of these claims under 35 U.S.C. § 112, first paragraph for the reasons discussed with respect to independent claims 1 and 21.

We are convinced by Appellant's argument (Reply Br. 9-10) that the claim language "liquid supply means" as recited in independent claims 1 and 21 complies with 35 U.S.C. § 112, second paragraph, by particularly pointing out and distinctly claiming the subject matter which applicant regards as the invention.

The Examiner found that the claim term "liquid supply means" is indefinite because it is unclear if this term refers to a "liquid supply or the means by [which] the liquid is supplied." (Ans. 4.) We do not agree.

As discussed previously, the recited function of the "liquid supply means" is for supplying liquid to the vaporization chamber through the input and the corresponding structure is the liquid pick-up tube inlet 38, the liquid pick-up tube 40, the pump 72 and the unreferenced reservoir described in the Specification.

Accordingly, we reverse the rejection of claims 1 and 21 under 35 U.S.C. § 112, second paragraph. Claims 2-20 and 22-25 depend from independent claims 1 and 21 and we reverse the rejection of these claims under 35 U.S.C. § 112, second paragraph for the reasons discussed with respect to independent claims 1 and 21.

We are convinced by Appellant's arguments (App. Br. 19-20) that the combination of Friedheim[2] and Hutchinson would not have rendered obvious all the features of independent claims 1 and 21.

The Examiner acknowledged that Friedheim does not teach the limitation of an "adjustable control means for adjustably controlling ongoing input of liquid from said liquid supply means during ongoing input" and cited Hutchinson for the disclosure of an electronic control system 22 that controls a low volume pulse pump 30 connected to a steam generating cylinder 10. (Ans. 5.) The Examiner concluded that it would have been obvious to modify Friedheim "with the liquid supply means [of Hutchinson] including a liquid source with a control means [22] to also adjustably control the pump [30] to provide the desired metered amount of liquid to achieve the desired controlled superheated steam during the ongoing input of the liquid during the operating process." (Ans. 5.) We do not agree.

We interpret an "adjustable control means" as a means-plus-function claim limitation. The recited function of the "adjustable control means" is "adjustably controlling ongoing input of liquid from said liquid supply means during ongoing input." Accordingly, the corresponding structure set forth in the Specification that performs this function is a fluid control valve 41 connected to a liquid pick-up tube 40. (Spec. 4, ¶ 5.) For example, the fluid control valve 41 can be a "ball-cock having a valve control 43 movable to adjust the flow of fluid therethrough" (Spec. 4, ¶ 5) or an electronic valve (Spec. 5, ¶ 1). However, the Examiner has not provided an

[2] Reference is made to U.S. Patent No. 5,471,556, issued to Friedheim. However, our discussion applies equally to U.S. Patent No. 4,414,037, also issued to Friedheim.

adequate analysis or explanation as to why the corresponding structure of the fluid control valve 41 described in the Specification is equivalent to the electronic control system 22 of Hutchinson that controls a low volume pulse pump 30. *See* MPEP § 2183.

Thus, we do not agree with the Examiner that the combination of Friedheim and Hutchinson would have rendered obvious an "adjustable control means for adjustably controlling ongoing input of liquid from said liquid supply means during ongoing input."

Accordingly, we reverse the rejection of claim 1 under 35 U.S.C. § 103(a). Claims 2-8 and 11-20 depend from independent claim 1 and we reverse the rejection of these claims under 35 U.S.C. § 103(a) for the reasons discussed with respect to independent claim 1.

Independent claim 21 recites limitations similar to those discussed with respect to independent claim 1. We reverse the rejection of this claim, as well as claims 22-25, which depend from claim 21, for the reasons discussed with respect to claim 1.

Claims 9 and 10 depend from independent claim 1 and as discussed previously, we reverse the rejection of claim 1. Berthoud, which was cited by the Examiner for teaching the additional features of claims 9 and 10 (Ans. 6), does not cure the above-noted deficiencies of Friedheim and Hutchinson.

However, we are not convinced by Appellant's arguments (App. Br. 19-20) that the combination of Friedheim and Hutchinson would not have rendered obvious all the features of independent claims 26 and 27. Instead of reciting an "adjustable control means," claim 26 recites "adjustably controlling in an ongoing manner volume, pressure or velocity

of said liquid upon being subjected to said superheating" and claim 27 recites similar language.

As discussed previously, the Examiner acknowledged that Friedheim does not teach all the features of claim 26 and cited Hutchinson for the disclosure of an electronic control system 22 that controls a low volume pulse pump 30 connected to a steam generating cylinder 10. (Ans. 5; Hutchinson, figs. 3, 11.) The Examiner concluded that this claim would have been obvious over the combination of Friedheim and Hutchinson. (Ans. 5.) We agree with the Examiner.

Friedheim describes "a system for rapid generation of superheated vapor such as superheated steam and for controlling and directing superheated vapor . . . ." (Col. 1, ll. 7-9.) Hutchinson describes a small volume steam generating system (col. 1, ll. 12-14) that includes an electronic control system 22 (col. 6, ll. 54-56) and a low volume pulse pump 30 connected to a steam generating cylinder 10 (col. 6, ll. 28-37; fig. 3). The low volume pulse pump 30 "provides the flow performance of 0.001 to 1.0 gallons per minute, at a 50 to 200 PSI range." (Col. 6, ll. 41-43.)

A person of ordinary skill in the art would have recognized that incorporating the low volume pulse pump 30 of Hutchinson with Friedheim provides the advantage of controlling the volume of water delivered to the vaporization chamber 126 of Friedheim. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007). Thus, we agree with the Examiner (Ans. 5) that modifying Friedheim to include the electronic control system 22 and the low volume pulse pump 30 of Hutchinson would have been obvious.

Therefore, we agree with the Examiner that the combination of Friedheim and Hutchinson would have rendered obvious all the features of independent claims 26 and 27.

Appellant also points toward objective evidence of a long-felt need in the art of superheated vapor generators. (App. Br. 21-25; *see also* Reply Br. 13.) As evidence, Appellant submitted a Declaration by Max Friedheim, dated April 24, 2006 ("Friedheim Decl.") and a Declaration by Terry Munson, dated February 4, 2008 ("Munson Decl."). We are not persuaded that the Examiner failed to properly weigh the evidence.

The Friedheim Declaration states that "adjusting [the] input of liquid to the pump and into the vaporization chamber" using a valve 41 through a valve control 43 is "an important advance because it enables the system to be employed flexibly for varied purposes . . ." including "clean[ing] and/or disinfect[ing] small or fragile parts . . . without taking the pump and/or system offline" (Friedheim Decl. ¶ 6) or "tinker[ing] with the pump to change its operating performance" (Friedheim Decl. ¶ 5). The Munson Declaration states that "[f]or many years there has been a [long] felt but unfulfilled need in my field of surface cleaning and testing for cleaning/testing devices which can rapidly deploy and rapidly adapt to different cleaning/testing requirements, such as the presence of small and delicate parts on the same platform with large and sturdy parts." (Munson Decl. ¶ 13.)

However, even if Appellant is correct in that such a long-felt need exists, the low volume pulse pump 30 of Hutchinson provides a solution for this need by accommodating a "flow performance of 0.001 to 1.0 gallons per minute, at a 50 to 200 PSI range" (col. 6, ll. 41-43) to a steam generating

cylinder 10 (col. 6, ll. 28-37; fig. 3). Hutchinson teaches that "[t]he volume of water delivered to the steam generating cylinder . . . can be adjusted by adjusting the diameter of the pump piston, the stroke of the eccentric arm and the RPM of the drive motor." (Col. 4, ll. 37-40.) In one example, Hutchinson teaches that the volume of water delivered to the steam generating cylinder 10 can be controlled by varying motor revolutions per minute (RPM), piston diameter and piston stroke (col. 8, l. 65 to col. 9, l. 17), rather than taking the pump offline or tinkering with the pump. Because the low volume pulse pump 30 of Hutchinson also controls the volume of water delivered to a steam generating cylinder 10 (col. 4, ll. 37-40; col. 6, ll. 41-43), one of ordinary skill in the art would expect the combination of Friedheim and Hutchinson to have the ability to clean "small and delicate parts on the same platform with large and sturdy parts" (Munson Decl. ¶ 13).

Therefore, neither Declaration sufficiently establishes that a long-felt need without solution existed. *See Newell Co. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988).

Accordingly, we sustain the rejection of independent claim 26 under 35 U.S.C. § 103(a). Independent claim 27 recites limitations similar to those discussed with respect to independent claim 26 and we sustain the rejection of this claim for the reasons discussed with respect to claim 26.

DECISION

The decision to reject claims 1-25 is reversed.

The decision to reject independent claims 26 and 27 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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